were examined, and in each case there was nerve degeneration more or less widely distributed, but most marked in the nerves supplying the affected bones or joints. The authors regard the number of observations as yet too few to speak with positiveness, but think the weight of evidence so far in favor of the neuritic, rather than of the myelopathic theory. ALLEN.

149. UEBER NERVENZELLENVERÄNDERUNGEN DES VORDERHORNS BEI TABES (Concerning Changes in the Cells of the Anterior Horns in Tabes). Karl Schaffer (Monatsschrift f. Psychiatrie u. Neurologie, 3, 1898, p. 64).

Schaffer attempts to prove that the cells of the anterior horns of the spinal cord are much altered in cases of tabes with trophic lesions, and that these cellular changes are the cause of the tabetic amyotrophy, osteopathy and arthropathy. In all instances of tabes with trophic lesions reported in the literature by other writers in which the peripheral nerves have been examined, these nerves have been found degenerated, and central lesions, apart from those in Leyden's case, have not been positively observed. Schaffer, however, two years ago published a case of tabetic amyotrophy and arthropathy of one lower limb, in which the cells of the anterior horns of the lumbar cord presented marked chromatolysis. In the present paper he reports the results of an examination of four new cases of tabes, only one of which was without trophic lesions. The changes in the cells of the anterior horns were the same whether amyotrophy, osteopathy or arthropathy existed, and were present in all cases with trophic disturbances. They were more advanced in cases with osteopathy and arthropathy than where amyotrophy existed alone. Central chromatolysis (destruction of the chromophilic elements about the nucleus) was almost invariably the earliest cellular lesion in these cases of tabes, and the disintegration extended peripherally. The edge of the nucleus appeared folded, the nucleus was eccentric, was stained a pale blue (normally it is unstained), and its shape was irregular. Later the nucleus was indistinct, the shape of the nucleolus was much altered, and the cell lost its processes. The nucleus and nucleolus exhibited degenerative changes only when the entire cell was altered.

Shaffer says that the Nissl method, as far as his experience in cellular pathology goes (infectious, toxic, trophic and nutritive changes), does not show specific staining in any case. The lesion is always chromatolysis, which, in its essential features, is always the same. This is a very different opinion from the one he formerly held. In tabes, however, vacuoles in the cells are not numerous, and this infrequency is due to the chronicity of the process, for vacuoles indicate an acute process.

The location of the cellular lesions in the cases of tabes corresponded to the centres of the parts involved in the trophic lesions, and in the one instance in which the latter were not observed distinct cellular changes were absent. He was unable, however, to find distinct groups of degenerated cells, as diseased cells were mingled with normal ones.

In chronic processes, according to Schaffer, only a portion of the cell body is at first affected ("partial degeneration"), and a decrease in the cell's vitality is caused in this way, which manifests itself first at the periphery of the neuron, i. e., in the end ramifications. As this "partial degeneration" increases, more central portions of the neuron are involved, and the alteration of the nerve gradually creeps upward toward the cell body. Chromatolisis must be regarded as a pathological process, and as the result of disturbed cellular nutrition; it is, therefore, an indication of the disturbed function, inasmuch as the latter depends on the cell's impaired vitality.

The tabetic atrophy is due to disease of the cells of the anterior horns, and the latter, in turn, is due to the loss of irritation transmitted through the posterior roots, to a feeble resisting power of these motor cells, and to the influences of the postsyphilitic toxin. The tabetic muscular atrophy resembles that of spinal muscular atrophy, and this fact Schaffer regards as an argument in favor of the spinal nature of the tabetic atrophy. The wasting which occurs in tabes should be looked upon as a complication, and not as an essential part of the disease; the correctness of this view is shown by the comparative rarity of the atrophy and the late appearance of the trophic lesions.

SPILLER.

150. DAS VERHALTEN DER SPINALGANGLIENZELLEN BEI TABES AUF GRUND NISSL'S FÄRBUNG (The Cells of the Spinal Ganglia in Tabes, as Shown by the Nissl Stain). K. Schaffer Neurologisches Centralblatt, 17, 1898, p. 2).

The author follows Lenhossék in his classical description of the spinal ganglion cells, and reports upon three cases of Tabes, one of which was examined in the early stages of the disease. By means of the Nissl methods of staining he was unable to find any grave cytological variations from the norm established by Lenhossék. In two of his cases the degeneration was marked in the posterior roots, yet the cells of the ganglia were practically normal, though he notes a quantitative difference in the amount of the coloration of the chromophilic substances, these appearing paler in the cells of the cases showing the stronger grade of degeneration. His results were, therefore, negative, and are distinctly in contrast with those of Marinesco. He furthermore concludes from these cases that the central lesion of tabes is probably not to be found in the spinal ganglia.

JELLIFFE.

151. DIE EMBRYONALEN FASERSYSTEME IN DEN HINTERSTRÄNGEN UND IHRE DEGENERATION BEI DER TABES DORSALIS (The Embryonal Fibre Systems in the Posterior Columns and their Degeneration in Tabes). Trepinski (Archiv f. Psychiatrie, 30, 1898, p. 54).

The author here presents, firstly, a careful study of the spinal cord of the newly born child, in which he believes he finds that four methods of development may be present, i. e., the development of the posterior columns, from an embryological point of view, proceeds along four different lines. Some of these embryonal fibre systems are morphologically quite distinct, while others overlap one another, both with reference to their position in the cord and to the time of their development. In accordance with this presention, he then discusses four cases of tabes, in each of which a different type of degenerative lesion can be demonstrated, corresponding, he believes, with the four embryonal fibre systems demonstrated in his preceding discussion. He states that, bearing these facts in mind, it is readily understood why such a variation in intensity and extension in the pathological pictures may be present. He would further erect at least four types of the disease, according to which of the embryonal fibre systems is most involved. Mixed types are naturally to be expected. The paper is well illustrated and suggestive.

JELLIFFE.

152. ACUTE DEGENERATION OF THE NERVOUS SYSTEM IN DIPHTHERIA. J. J. Thomas (Boston Med. and Surg. Jour., 38, 1898, pp. 76, 97, 123).

In this series of articles an important contribution is made to the pathology of diphtheria which posseses an additional interest from